GOVERNMENT OF ANDHRA PRADESH
ABSTRACT

ITE&C Department – Setting up of Andhra Pradesh State Quantum Mission (SQM) – Orders – Issued

---

INFORMATION TECHNOLOGY, ELECTRONICS & COMMUNICATIONS (INFRA) DEPARTMENT

G.O.Ms.No.19 Dated:08.06.2025.
Read:

Efile No: ITC01-IT0INFR/6/2025-INFRA (Computer No. 2830108) – Setting up of Andhra Pradesh State Quantum Mission (SQM) from ITE&C (Infra Wing) Department, Government of Andhra Pradesh.

ORDER:

The Government of Andhra Pradesh has embarked on an ambitious plan to develop a "Quantum Valley" in the capital region of Amaravati. The objective is to create a knowledge and technology hub that brings together academic institutions, startups, global technology providers, and research labs focused on quantum computing, other quantum technologies and deep technologies. In this direction, the Capital Region Development Authority (CRDA), allocated 50 acres of land for the initiative in Amaravati and the state has signed Memoranda of Understanding (MoUs) with M/s IBM, M/s TCS and M/s L&T.

2. To institutionalize and drive this initiative, Government of Andhra Pradesh (GoAP) has proposed the establishment of the Andhra Pradesh State Quantum Mission (APSQM). This mission will act as the apex body for planning, coordination, and execution of quantum-related programs in the state. The Mission will oversee the development of the Quantum Valley and guide the strategic integration of research, education, innovation, industry collaboration, infrastructure creation, and policy formulation. The rationale for launching the APSQM lies in the transformative potential of quantum technologies across multiple domains, including cybersecurity, drug discovery, material science, and financial modeling.

3. The State Quantum Mission (SQM) integrates with the broader National Quantum Mission (NQM) framework. The National Quantum Mission outlines key national objectives in building quantum capabilities, but execution at the state level requires tailored institutions that can engage with local stakeholders and act swiftly. By setting up the APSQM, Andhra Pradesh can leverage national funding, create world-class infrastructure, and nurture local talent. This early mover advantage will help Andhra Pradesh become a central node in India's quantum ecosystem and attract further investments, thereby creating jobs and enhancing the state's technological self-reliance. The detailed State Quantum Mission (SQM) is attached in the annexure.

4. The AP State Quantum Mission (SQM) shall comprise of the following members:

a. The Honorable Chief Minister of Andhra Pradesh, Chairman
b. The Honorable Minister, ITE&C, GoAP, Member
c. The Chief Secretary, GoAP, Member
d. The Secretary, ITE&C, GoAP, Member
e. The Secretary finance ,GoAP, Member
f. The Mission Director, AP State Quantum Mission, Member Convener

5. The Mission will be supported by an empowered group of experts who will be nominated by the APSQM. The group shall consist of experts in the areas of quantum computing, artificial intelligence, machine learning, and other related areas of expertise.

6. The Secretary, ITE&C Department shall take steps to appoint the Mission Director, Andhra Pradesh State Quantum Mission (APSQM).

7. The Government hereby approves the setting up of Andhra Pradesh State Quantum Mission (APSQM).

8. This orders issues with the Concurrence of Finance Department vide their UO No.FIN01-FIIT0MISC/1/2025-FMU-GAD-I, dt:03.06.2025 (Computer No. 2832502).

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

BHASKAR KATAMNENI
SECRETARY TO GOVERNMENT

To:
All the Departments of the Secretariat
All the Heads of the Departments
Copy to:
The Chief Secretary to the Government of Andhra Pradesh
The Secretary to the Chief Minister, CMO
The PS to SIT/SSIT
SC/SF (Computer No.2830108)

//FORWARDED::BY ORDER//

ASSISTANT SECRETARY TO GOVERNMENT (I/c)

Annexure

(to G.O.Ms.No.19, ITE&C Department, dt:08.06.2025)

Andhra Pradesh State Quantum Mission (SQM)

1. Vision

a. The Andhra Pradesh State Quantum Mission (APSQM) envisions transforming the state into a nationally significant hub for quantum science and technology through sustained investments in research, innovation, talent development, and industrial application.
b. The mission aims to establish a thriving "Quantum Valley" ecosystem that not only contributes to India's National Quantum Mission goals but also strengthens the knowledge economy and technological leadership of Andhra Pradesh.
c. By nurturing a robust quantum research base and encouraging commercial applications, the state seeks to unlock the transformative power of quantum technologies for societal and economic progress.

2. Mission Objectives

a. The primary objective of the APSQM is to provide a strategic framework to support and accelerate quantum innovation within the state. This includes enabling world- class quantum research in domains such as computing, communication, sensing, and materials, and facilitating the development of an end-to-end ecosystem encompassing academia, industry, and startups.
b. The mission will aim to develop a comprehensive infrastructure for experimentation and prototyping, encourage the incubation of quantum-tech startups, create specialized talent development pipelines, and establish partnerships at national and global levels.
c. Specific goals include setting up Quantum Technology Innovation Hubs (QTIHs), enabling secure quantum communication pilots, and promoting applications across key sectors such as agriculture, finance, defense, healthcare, and space.

3. Focus Areas

In line with the NQM, the APSQM will prioritize four core focus areas.

a. First, Quantum Computing, which involves the development of quantum processors (up to 50–1000 quantum bits, or qubits), quantum algorithms, and simulation platforms to solve problems beyond the capabilities of classical computers.
b. Second, Quantum Communication, with the goal of deploying secure, quantum key distribution (QKD) networks connecting research centers and government facilities across the state.
c. Third, Quantum Sensing and Metrology, which includes the development of ultra-sensitive sensors for agriculture, geology, defense, and biomedical fields.
d. Finally, Quantum Materials and Devices, where Andhra Pradesh can contribute to the development of enabling technologies such as superconducting qubits, silicon spin systems, photonic chips, and cryogenic platforms. These areas will be supported by targeted research grants, infrastructure investments, and collaboration initiatives.

4. Institutional Framework and Governance

a. The day to day affairs of the State Quantum Mission will be managed by the Mission Director, Andhra Pradesh State Quantum Mission (APSQM), functioning under the Department of ITE&C.
b. The directorate will act as the apex coordinating body, responsible for mission design, policy formulation, fund allocation, and performance monitoring. It will

work in tandem with the National Quantum Mission implementation team to ensure strategic coherence.

c. An Advisory Committee composed of eminent scientists, industry leaders, and policymakers will provide strategic direction and periodic evaluation.

5. The Mission shall consists of

a. The Honorable Chief Minister of Andhra Pradesh, Chairman

b. The Honorable Minister, ITE&C, GoAP, Member

c. The Chief Secretary, GoAP, Member

d. The Secretary, ITE&C, GoAP, Member

e. The Secretary Finance ,GoAP, Member

f. The Mission Director, AP State Quantum Mission, Member Convener

Mission will be supported by an empowered group of experts who will be nominated by the APSQM. The group shall consist of experts in the areas of quantum computing, AI, deep tech, and other related areas of expertise

6. Role of Stakeholders

a. The SQM will thrive on the synergy of stakeholders from academia, government, and industry.
b. Academic institutions will serve as the research backbone of the mission, to introduce specialized programs in quantum science and engineering, including M.Tech, PhD, and postdoctoral tracks.
c. Faculty recruitment, visiting scholar schemes, and quantum fellowships will be introduced to attract top talent.
d. Industries, particularly in IT, electronics, defense, and advanced manufacturing, will be engaged to develop quantum-enabled applications, co-create use cases, and participate in joint R&D.
e. Startups will be supported through dedicated incubation schemes and access to testing facilities.
f. The state government will ensure enabling infrastructure, fiscal incentives, and international cooperation opportunities, while working closely with DST, MeitY, DRDO, and the Principal Scientific Adviser’s Office in partnership with the NQM.

7. Strategic Roadmap and Timelines

The implementation of the APSQM will follow a phased approach.

a. In Phase I (2025–2027), the emphasis will be on building the quantum computing infrastructure and also creating large-scale test-beds, and enabling industry collaborations. The focus will also be on laying foundational infrastructure, launching education programs, and initiating research projects in collaboration with national and international partners. Pilot programs in all areas using quantum computing shall be also launched.
b. By Phase II (2027–2030), the goal is to transition to global leadership in select domains by developing commercial quantum technologies, establishing export capabilities, and positioning Andhra Pradesh as a global quantum destination.

8. Funding and Incentives

a. The total funds required shall be provided with a combination of public investment, central government grants, private sector contributions, and international partnerships.
b. Special Economic Zones (SEZs) or Quantum Innovation Corridors may be proposed to host R&D labs, accelerators, and industrial units in a clustered model centered in Amaravati. Co-investments from venture capital, CSR

funding, and multilateral grants (e.g., from DST or foreign science councils) will be actively pursued.

9. Monitoring and Outcomes

a. The APSQM will employ a robust monitoring and evaluation framework to ensure accountability and transparency.
b. Bi-annual performance reviews will be conducted through third-party audits. Key performance indicators will include the establishment of physical infrastructure, number of patents filed, quantum- trained professionals, startups incubated, and quantum applications deployed.
c. The mission will also track the economic and employment impact of quantum investments.
d. A centralized quantum data platform will be established to catalog projects, research outputs, and innovation stories for both internal assessment and public communication.

10. Integration with the National Quantum Mission (NQM)

a. The Andhra Pradesh SQM is fully aligned with the objectives and structure of the National Quantum Mission. It will serve as a strategic node in the national quantum ecosystem and contribute to the overall goal of making India a global quantum power.
b. Collaboration will be ensured through shared test-beds, participation in national research clusters, and adherence to standards, protocols, and ethics frameworks promoted by the national mission.
c. Andhra Pradesh will also act as a pilot state for deploying quantum-enabled public infrastructure such as secure governance communication, quantum navigation, or quantum-safe IoT systems in agriculture and logistics.

BHASKAR KATAMNENI
SECRETARY TO GOVERNMENT